ECONOMIC IMPACT ASSESSMENT

TITLE 2. ADMINISTRATION
DIVISION 3. STATE PROPERTY OPERATIONS
CHAPTER 1. STATE LANDS COMMISSION
ARTICLE 4.7. PERFORMANCE STANDARDS AND ASSESSMENT PROTOCOLS FOR THE DISCHARGE OF BALLAST WATER FOR VESSELS OPERATING IN CALIFORNIA WATERS

The Commission staff has conducted an Economic Impact Assessment that analyzes whether and to what extent the proposed regulation will affect the following (see below).

The proposed regulations establish procedures for the collection and analysis of ballast water samples to assess vessel compliance with California's performance standards for the discharge of ballast water. All vessel inspections are conducted by Commission staff, and the funds for such inspections are already provided to the State, specifically the Marine Invasive Species Control Fund, pursuant to Pubic Resources Code (PCR) Section 71215. No additional fees are proposed to be placed on vessels to support the inspection procedures established by the proposed regulations. There will be no mandate created for local governments, agencies or special (e.g. port) districts.

Ballast water discharges into the waters of the state would not be allowed from any vessel not equipped with a sampling port to allow the Commission's inspectors to take ballast water samples and conduct inspections. The costs to install sample ports has been estimated as a one-time cost of no more than $5000 per vessel (see the Notice of Proposed Rulemaking and Form 399 for cost details and source of estimates). Any additional costs to representative persons or businesses associated with compliance with California's performance standards and assessment protocols for the discharge of ballast water result from the statutory establishment of performance standards for the discharge of ballast water for vessels operating in California waters (see PRC Section 71205.3). The proposed regulations simply clarify the compliance assessment process.

(A) The creation or elimination of jobs within the State of California

Analysis: The proposed regulations make clarifying amendments to existing regulatory language, amend and simplify the existing requirements for sampling port design and installation, and adopt new procedures for Commission staff to take ballast water samples and assess vessel compliance with the provisions set forth in Article 4.7. None of these changes should have any significant impact on the creation or elimination of jobs within the State of California. The Commission currently has staff members who are responsible for the inspection of vessels operating in California waters for compliance with the Marine Invasive Species Act (Public Resources Code Section 71200 *et seq*.) and associated regulations (California Code of Resources Sections 2270 *et seq*.). The Commission staff positions are supported solely by vessel fees paid into the Marine Invasive Species Control Fund (see 2 CCR Section 2270). The proposed regulation does not increase the vessel fee paid to the Fund, and therefore no additional

funding is available to support the hiring of new staff to conduct the proposed inspections and analyses.

Private individuals are not permitted to board and conduct vessel inspections for the California State Lands Commission, and therefore no new jobs in the private sector will be created in the short-term as a result of the adoption of these sampling procedures. In the long-term, 2016 or later, once all vessels operating in state waters are required to comply with the performance standards already established by Article 4.7, there may be a need for scientific laboratories in and around California's major port zones (Los Angeles/Long Beach and San Francisco Bay) to hire additional staff to conduct processing of ballast water samples for compliance purposes. At this time, however, it is premature to speculate on how many new positions may be required to process these ballast water samples.

It is not expected that the regulations will eliminate any jobs within the State of California, as the proposed regulations place additional burdens on Commission staff, but not on private business. Indeed, the amendments to the sampling port regulation language (Section 2297(a)) should reduce the burden of current requirements associated with sampling port installation for the regulated industry. The one-time cost estimated for the installation of sample ports on vessels is not expected to exceed $5000 and should not impact the creation or elimination of any positions.

Conclusion: The proposed regulation will have no significant impact upon the creation or elimination of jobs within the State of California.

(B) The creation of new businesses or the elimination of existing businesses within the State of California

Analysis: The proposed regulations make clarifying amendments to existing regulatory language, amend and simplify the existing requirements for sampling port design and installation, and adopt new procedures for Commission staff to take ballast water samples and assess vessel compliance with the provisions set forth in Article 4.7. At this time, the collection of ballast water samples and the analysis of those samples to determine vessel compliance with the provisions of Article 4.7 will be performed by Commission staff. Commission staff may contract with biological laboratories to conduct some of the bacteriological analyses; however, there are many existing laboratory facilities in and around California's major port zones currently capable of conducting the required types of analysis. Therefore, in the short-term, the proposed regulations do not require nor create the need for new businesses to conduct the analyses set forth in the proposed regulations.

In the long-term, the regulations may spur innovative companies to develop rapid scientific methods or test kits for the analysis of ballast water compliance samples. At this time, however, it is premature to speculate on how may many or what types of businesses could be created to develop novel techniques to process these ballast water samples.

It is not expected that the regulations will cause the elimination of any existing businesses within California, as the proposed regulations do not pose significant additional financial burdens on the regulated community, nor do the regulations require Commission staff to take over work currently being performed by the private sector. Commission staff will conduct the compliance inspections and analyses described in the proposed regulations. The one-time cost estimated for the installation of sample ports on vessels is not estimated to exceed $5000 and should not impact the creation or elimination of any businesses within the State of California. Any additional costs to representative persons or businesses associated with compliance with California's performance standards and assessment protocols for the discharge of ballast water result from the statutory establishment of performance standards for the discharge of ballast water for vessels operating in California waters (see PRC Section 71205.3). The proposed regulations simply clarify the compliance assessment process.

Conclusion: The proposed regulation will have no significant impact upon the creation of new businesses or the elimination of existing businesses within the State of California.

(C) The expansion of businesses currently doing business within the State of California

Analysis: The proposed regulations make clarifying amendments to existing regulatory language, amend and simplify the existing requirements for sampling port design and installation, and adopt new procedures for Commission staff to take ballast water samples and assess vessel compliance with the provisions set forth in Article 4.7. The proposed regulations will require the expansion of activities conducted by Commission staff, as private individuals are not permitted to conduct ballast water compliance inspections. Thus, we do not expect an expansion of private sector businesses currently doing business within the State of California.

Conclusion: The proposed regulation will have no significant impact upon the expansion of businesses currently doing business within the State of California.

(D) Benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.

Analysis: The proposed regulations make clarifying amendments to existing regulatory language, amend and simplify the existing requirements for sampling port design and installation, and adopt new procedures for Commission staff to take ballast water samples and assess vessel compliance with the provisions set forth in Article 4.7. The proposed regulations do not make changes to existing worker safety requirements, and therefore we do not expect the regulations to have a significant impact (either positive or negative) upon worker safety with the State of California.

The proposed regulations are expected to benefit both the health and welfare of California residents as well as the state's environment. Nonindigenous species

discharged in ballast water can have severe ecological, economic, and human health impacts in the receiving environment. One of the most infamous examples is the zebra mussel (*Dreissena polymorpha*), which was introduced from the Black Sea to the Great Lakes in the mid-1980s (Carlton 2008).This tiny striped mussel attaches to hard surfaces in dense populations that clog municipal water systems and electric generating plants, costing approximately $1 billion a year in damage and control for the Great Lakes alone (Pimentel et al. 2005). These mussels were discovered in California in 2008 and have invaded San Justo Lake in San Benito County, and the cousin of the zebra mussel, the quagga mussel, has invaded multiple locations in southern California (California Department of Fish and Game 2008, USGS 2011). Over $10 million has been spent in quagga and zebra mussel control thus far in California, and should these mussels spread to the Lake Tahoe region, they could create damage and control costs of up to $22 million (Army Corps of Engineers (2009) as referenced by Center for Invasive Species Research 2012).

In San Francisco Bay, the overbite clam (*Corbula amurensi*s) spread throughout the region's waterways within two years of being detected in 1986. The clam accounts for up to 95% of the living biomass in some shallow portions of the bay floor (Nichols et al. 1990). It is believed to be a major contributor to the decline of several pelagic fish species in the Sacramento-San Joaquin River Delta, including the threatened delta smelt, by reducing the plankton food base of the ecosystem (Feyrer et al. 2003, Sommer et al. 2007).

Vessels and port areas have been connected to the spread of epidemic human cholera in a number of instances (Takahashi et al. 2008, Ruiz et al. 2000b), including the transport of the toxigenic *Vibrio cholerae* serotype O1 from Latin America to Mobile Bay, Alabama in 1991, which lead to the closure of nearly all Mobile oyster beds that summer and fall (Lovell and Drake 2009). In addition to cholera, microbes that have been found in ships include the microorganisms that cause paralytic shellfish poisoning (Hallegraeff 1998), coral pathogens (Aguirre-Macedo et al. 2008), human intestinal parasites (*Giardia lamblia, Cryptosporidium parvum, Enterocytozoon bieneusi)* and the microbial indicators for fecal contamination (*E. coli* and intestinal enterococci) (Reid et al. 2007).

In recognition of the substantial threat to the state's economy, environment and human health, the California Legislature enacted the Marine Invasive Species Act in 2003 and the Coastal Ecosystems Protection Act in 2006. In 2007 the California State Lands Commission adopted strict performance standards for the discharge of ballast water (see 2 CCR Section 2291 *et seq*.) in order to limit the number of species being introduced into California waters from vessel's ballast water.

The proposed regulations establish methods for Commission staff to assess vessel compliance with California's performance standards for the discharge of ballast water. Therefore Commission staff will be able to effectively enforce the provisions of California's performance standards and assess whether vessels are complying with the law. Vessels that are complying with the performance standards will significantly reduce the discharge of nonindigenous species into California waters, and therefore human

health and welfare, as well as the environment, will benefit significantly by enforcement of this important regulation.

Conclusions:

1) The proposed regulation will have no significant impact upon worker safety within the State of California.
2) Commission staff has determined that the proposed regulation will significantly benefit the health and welfare of California residents as well as the state's environment.

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